

In the Matter of
United States Patent Application 11/788,978
Inventor: Robert Bonthron DURWARD
Title: Method And Apparatus For Enhancing Fluid Velocities In Pipelines

DECLARATION BY INDEPENDENT EXPERT

I, Myron Palmer Pederson hereby declare that:

1. This affidavit is intended to provide Examiner Dwivedi with background information on pipeline pigs.
2. I have qualifications as a plumber, gas fitter and steam fitter. I have worked in the pipeline and associated mechanical industry since 1968. I was construction superintendent on pipelines and facilities with Husky Energy for 22 years, until my retirement in July of 2007. I am presently working as a manager of business development for a pipeline construction company.
3. I have reviewed the Patent Application submitted by Mr. Durward and the Examination Report dated September 24, 2007. The Examiner's reference to an "iron pig" defined as a "crude casting of metal" is clearly not applicable to the pipeline industry. Similarly, the Examiner's reference to a gas lift plunger in United States Patent 4,596,516 (Scott et al) entitled "Gas Lift Apparatus Having Condition Responsive Gas Inlet Valve" is clearly not applicable to the pipeline industry.
4. The term pig, as that term is used in the pipeline industry, is a device that is inserted into the pipeline that travels through the pipeline under the pressure of the product in the line. Pipeline pig come in a variety of configurations and the ones I have mainly been involved with have a central body tube with rubber or neoprene sealing cups. We used nitrogen under pressure to propel these pigs along a section of pipeline, in order to purge the product from the line. Lead cups on the pigs serve to catch the pressure, so that the nitrogen propels them through the pipeline.
5. The shape of the body of the pigs differ depending upon their intended purpose. Cleaning pigs are designed to remove deposits or debris and clean the interior surface of the pipe. Line inspection tools (intelligent pigs) are sent through the line and provide information about the condition of the pipeline, and the location of anomalies in the line.
6. During normal operation, pigs are not used to move fluid through a pipeline, as fluid can be moved through a pipeline simply by using pumps. The only situations in which I can recall using pigs to move fluid is when we were using inhibitors or some other chemical treatment, used to preserve the pipeline. In those cases we placed a batch of inhibitors between two pigs.
7. Currently, when moving fluid through a pipeline, if one wants to increase the velocity of the fluid, one must increase the pressure. There are practical limits as to how much one may increase the pressure depending on design criteria.

Declaration for application

8. I have no difficulty understanding the concept advanced by Mr. Durward that in order to increase the velocity of the fluid passing through the pipeline, he intends to provide a pig that can "push" the fluid through the pipeline. The structure of the pig would be similar to the structure that we have used in the past to move batches of solvents and other chemicals. He proposes that this pig be propelled by an electromagnetic field, so that he does not have to increase pressure to increase velocity. Principles relating to electromagnetic propulsion are well known. I have never heard of such principles being applied to pipeline pigs before.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name: **Myron Palmer Pederson**

signature: Myron Palmer

Date of signing: **January 8, 2008**

Residence: **Alberta, Canada**